REMARKS/ARGUMENTS

Reconsideration of this application and entry of this Amendment are requested. Claims 11-13 will remain pending in the application subsequent to entry of this Amendment.

Submitted with this response is a revised Abstract of the Disclosure responding to the examiner's comments on page 2, second paragraph of the Official Action.

Claims 11 and 13 have been amended in order to specify that the ethylene homopolymer has a weight average molecular weight of 40,000 to 10,000 D (Daltons), the form of expression being consistent with other aspects of these claims. It also reflects the understanding expressed by the examiner in the last sentence of page 2 of the Official Action in which the claims are criticized as being unclear. Withdrawal of this rejection is requested.

The balance of the Official Action relates to a rejection of all claims based on nine[1] documents although primarily the Morimoto document U.S. 5,189,106 which is relied on. The other documents appear to be used to argue that any features of the examined claims not mentioned are inherent in Morimoto or obvious desiderata. It is contended that Morimoto "teaches" blow moulding. In column 26, section 4, the polyethylene composition in Morimoto is suggested for use in

> *"various kinds of films, sheets, pipes, hollow containers, coating or wrapping materials and foamed articles. Various kinds of moulded goods can be produced because the polyethylene composition of the invention can be processed by any moulding method such as extrusion moulding, blow moulding and injection moulding".*

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[1] As the courts have stated, the fact that it is necessary to cite such a large number of references is, in and of itself, indicative of non-obviousness. *Minneapolis-Honeywell Regulator Company v. Midwestern Instruments, Inc.*, 298 F.2d 36, 38, 131 U.S.P.Q. 402, 403 (7th Cir. 1961); *The Ric-Wil Company v. E.B. Kaiser Company*, 179 F.2d 401, 404, 84 U.S.P.Q. 121, 124 (7th Cir. 1950); *Reynolds et al v. Whitin Machine Works*, 167 F.2d 78, 83, 76 U.S.P.Q. 551, 555 (4th Cir. 1948); and *Racal-Vadic, Inc. v. Universal Data Systems*, 1980 U.S. Dist. LEXIS 15864, *81, 207 U.S.P.Q. 902, 927 (N.D. Ala. 1980). Indeed, the inference that can be taken from the large reference citation is that not one reference is on point and that the applicant has clearly accomplished what the prior art has repeatedly failed to do. *Minneapolis-Honeywell Regulator Company v. Midwestern Instruments, Inc.*, 298 F.2d 36, 38, 131 U.S.P.Q. 402, 403 (7th Cir. 1961).

What this passage actually tells the skilled man is that the composition of Morimoto can be used in almost all polymer processing techniques. This paragraph does not highlight blow moulding as being particularly advantageous over any other kind of moulding technique of other polymer manipulation process. This cannot therefore be considered a specific teaching towards blow moulding at all.

It must also be noted that the present invention concerns high density polyethylene. For the most part, Morimoto is concerned with linear low density polyethylene. Attention is drawn to the density range in column 5, line 46 which is preferably 0.900 to 0.940 g/cm^3. It is clear therefore that the density range which Morimoto intends to work in is not high density but medium to low density. It is only the very broad range that actually encompasses anything in applicants' claims and this is outside the core area of interest in Morimoto. There is however partial overlap and applicants are willing to concede this.

The Examiner then goes searching for the various parameters of the claims in Morimoto. These parameters are not found together but in isolated disclosures. Starting with ESCR it is noted that in table 16 of Morimoto ESCRs of greater than 1000 hours are reported. Table 16 of Morimoto describes comparative examples which are not within the scope of the invention of Morimoto and which have densities in the low density area. Applicants are not claiming that they have invented the only polymer with a high ESCR. What should be noted however is that applicants' polymers have both high density and high ESCR. That is not described in table 16 of Morimoto.

In fact, if one considers at all the examples of the invention in Morimoto it is only examples 11, 12, 16 and 17 which have densities anywhere near those that are claimed in the instant application. If one looks at the ESCR values reported for these examples however one will see that the ESCRs are very low. The ESCR reported for example 11 is 60 hours, for example 12 it is 70 hours, for example 16 it is 90 hours, and for example 17 it is 50 hours. Contrast this to many of the other examples in Morimoto in which ESCR values of greater than 1000 are reported. What will be noted however is that the density of all these examples is in the low density area not the high density area. What Morimoto is teaching the reader therefore is that in his examples you cannot get high ESCR and high density. Morimoto in no way teaches the skilled man that you can achieve what is claimed in the present invention.

Next consider the high load MFR (MFR21) and note that the Examiner argues that in table 5b and, in particular, in example 5 the high load MFR is approximately 4.5. However, the density of example 5 is 910 g/cm^3. This is not a high density material. If one looks at the high load MFR values reported for the high density examples in Morimoto then one must also consider examples 12, 16 and 17 again and note that the high load MFR values for these examples are 294, 78 and 102 respectively (no HLMFR/MFR value is quoted for example 11). These are so far off the 3 to 8 g/10 min limit in claim 11 that these are very different polymers.

While the applicant is willing to admit that some of the examples in Morimoto have high ESCRs and some of the examples have high density and some of the examples have low MFR21 what is not present is an example of the Morimoto invention having a high density, a high ESCR and a low MFR21 in the range of 3 to 8 g/10 min. It is not possible to look at all these parameters in isolation. Parameters like these are intrinsically linked and it is simply not possible to vary one without considering how the other will vary. Morimoto does not teach the formation of any polymer composition as claimed in the present application.

Moving on to comonomer content, the Examiner refers to the Debras, Harlin and Barry documents which he alleges disclose analogous methods wherein the comonomer content is optimized to produce desired results such as improved crack resistance. There is nothing in Debras that teaches a comonomer content in the range 1 to 2 wt%. In column 4 of Debras there is a disclosure of the concentration of comonomer which should be used in the reaction but there is no disclosure whatsoever of how much comonomer should be present in the eventual polymer. In fact, Debras is presumably primarily relied upon because of its disclosure of molecular weight distributions for bimodal polymers. It mentions at the bottom of column 4, line 64 that the molecular weight distribution may be in the range of 10 to 20. Note that applicants' claim 11 covers a range of 18 to 50 and therefore covers polymers of essentially much broader distribution than are taught by Debras. Those compounds exemplified by Debras have narrower molecular weight distributions than applicants claim.

In Harlin, there is no disclosure of how much comonomer should be in the polymer in the passages highlighted by the Examiner. In fact the amount of comonomer present is mentioned in Harlow in column 3, line 64 and the range of 0.5 to 10% by weight is given. Why does this document tell the reader of Morimoto to make his polymers 1 to 2 weight % comonomer? There

is no disclosure in Barry either of the necessary comonomer content range. Where is the teaching therefore that a value of 1 to 2 wt% should be used in conjunction with the ESCR, MFR21, density and MWD ranges now quoted in claim 1? In fact, no such teaching exists.

The Examiner makes reference to Suttoni and McWhorter in relation to containers of a large volume. Applicants do not intend to argue that a container of large volume is inherently inventive so do not see these documents as being relevant to the discussion of obviousness.

The Examiner then addresses the issue of molecular weight and notes that Page contains an equation in which the intrinsic viscosity and molecular weight can be linked. He also notes that in Jacob column 14, lines 54 to 67 various intrinsic viscosities are quoted alongside molecular weights. In particular, 2.81 dl/g corresponds to a molecular weight of 125,000, 1.2 dl/g corresponds to a molecular weight of 60,000 and 0.78 dl/g corresponds to a molecular weight of 40,000. It should be noted that if you put these values into the equation in Page the equation does not work and if one were to consider the values of Jacob in connection with the Morimoto disclosure it can be seen that for examples 11, 12, 16 and 17, the intrinsic viscosity is so low that these materials will not have a molecular weight of 250,000. In fact if one is to believe Jacob that intrinsic viscosity goes up as molecular weight goes up, the Examiner will note that none of the examples will have a molecular weight of at least 250,000. Almost all the examples have an intrinsic viscosity of less than 2.81 dl/g corresponding to a molecular weight of 125,000.

The relevance of the O'Brien reference is unclear. It does perhaps suggest that a molecular weight of 250,000 corresponds to 5 dl/g in which case this proves that Morimoto does not disclose polymers with sufficiency high molecular weight to impact the inventiveness of claim 11.

Not mentioned in the Official Action is the tensile modulus parameter in claim 11 so attention is directed to column 5, line 51 of Morimoto where it is stated that when the density is higher than 0.950 g/cm^3 mechanical properties such as tensile impact strength are low. The implication here is that high density means weaker mechanical strength then this teaches against the high density materials which are claimed in the present invention.

For almost all the parameters in claim 11 applicants have shown that Morimoto does not disclose that parameter. Morimoto does not therefore make the process of claim 11 obvious because Morimoto does not teach the process at all.

For the above reasons it is respectfully submitted that the claims of this application define inventive subject matter. Reconsideration and allowance are solicited.

Respectfully submitted,

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